Production of the refolded oligopeptide-binding protein (OppA) encoded by the citrus pathogen Xanthomonas axonopodis pv. citri

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ABSTRACT. The oligopeptide-binding protein, OppA, binds and ushers oligopeptide substrates to the membrane-associated oligopeptide permease (Opp), a multi-component ABC-type transporter involved in the uptake of oligopeptides expressed by several bacterial species. In the present study, we report the cloning, purification, refolding and conformational analysis of a recombinant OppA protein derived from Xanthomonas axonopodis pv. citri (X. citri), the etiological agent of citrus canker. The oppA gene was expressed in Escherichia coli BL21 (DE3) strain under optimized inducing conditions and the recombinant protein remained largely insoluble. Solubilization was achieved following refolding of the denatured protein. Circular dichroism analysis indicated that the recombinant OppA protein preserved conformational features of orthologs expressed by other bacterial species. The refolded recombinant OppA represents a useful tool for structural and functional analyses of the X. citri protein.

Key words: OppA; Xanthomonas citri; Refolding